CLAIMS

1. A manually operated afterloader for use with a radioactive elongated source wire, the source wire having a relatively short radioactive portion and a relatively long non-radioactive portion, comprising:

a base;

a shield capsule defining a pathway therethrough which receives a portion of a source wire;

a source wire drum rotatably mounted with respect to the base, the drum having a circumference and receiving a non-radioactive portion of a source wire;

a manually operable cranking mechanism mounted to the base and engagable with the drum to rotate the drum, the cranking mechanism, when operated driving a non-radioactive portion of the source wire off of the drum such that the radioactive portion of the source wire extends out of the shield capsule.

2. The afterloader as recited in claim 1, further comprising a cable mounted on the source wire drum such that the cable biases the non-radioactive portion of the source wire along the circumference of the drum.

3. The afterloader as recited in claim 2, wherein the cable is a flexible belt, and wherein the flexible belt is mounted around a first tension wheel biasing a portion of the flexible belt into engagement with the drum and a second tension wheel tensioning the flexible belt.

4. The afterloader as recited in claim 3, wherein the first tension wheel is fixed relative to the base plate and the second tension wheel is movable relative to the base plate so as to tension the flexible belt.

5. The afterloader as recited in claim 4, wherein the second tension wheel is mounted on a spring biased yoke mounted with respect to the base plate.

6. The afterloader as recited in claim 1, further comprising a guide tube positioned between the source wire drum and the shield capsule such that one end of the guide tube is aligned with a tangent of the source wire drum and an opposite end of the guide tube is aligned with one end of the pathway through the shield capsule.

7. The afterloader as recited in claim 1, wherein the pathway is non-linear.

8. The afterloader as recited in claim 1, wherein the cranking mechanism includes a drive shaft rotatably mounted with respect to the base plate, a crank affixed to one end of a drive shaft and a slip clutch operatively connected to the drive shaft.

9. The afterloader as recited in claim 8, wherein the cranking mechanism further includes a crank handle movable between a first position allowing

rotation of the drive shaft and a second position frictionally restraining the drive shaft from being rotated.

10. The afterloader as recited in claim 1, further comprising a temporary stop engagable with the drum, the temporary stop halting rotation of the drum after one or more predetermined amounts of rotation of the drum.

11. The afterloader as recited in claim 1, wherein the drum further comprises a first stop block limiting the amount of rotation of the drum in a first direction and a second stop block limiting the amount of rotation of the drum in a second direction.

12. The afterloader as recited in claim 1, further comprising a drum lock engageable with a portion of the drum, the drum lock when in an engaged position, preventing movement of the drum.

13. The afterloader as recited in claim 12, wherein the circumference of the drum includes a threaded groove, the threaded groove receiving a non-radioactive portion of the source wire.

14. The afterloader as recited in claim 1, further comprising a second drum operatively associated with the cranking mechanism, wherein a selector permits rotation of one of the first and second drums.

15. The afterloader as recited in claim 14, further comprising first and second drum locks respectively engageable with the first and second drums, wherein the selector is engageable with the first and second drum locks to selectively prevent rotation of the drums.

16. A manually operated afterloader, comprising:

a base;

a shield capsule defining a pathway therethrough which receives a portion of a source wire;

a first drum rotatably mounted with respect to the base, the drum having a circumference and receiving a non-radioactive portion of a source wire;

a second drum rotatably mounted with respect to the base, the second drum having a circumference and receiving a portion of a second wire;

a first manually operable cranking mechanism mounted to the base and engagable with the first drum to rotate the first drum, the cranking mechanism, when operated driving a non-radioactive portion of the source wire off of the drum such that a radioactive portion of the source wire extends out of the shield capsule; and

a second manually operable cranking mechanism mounted to the base and engagable with the second drum to rotate the second drum, the cranking mechanism, when operated driving a portion of the second wire off of the drum such that an end portion of the second wire extends out of a channel within the afterloader.

17. The afterloader as recited in claim 16, further comprising first and second cables mounted on the first and second drums such that the cables bias respectfully the non-radioactive portion of the source wire and a portion of the second wire along the circumferences of the first and second drums.

18. The afterloader as recited in claim 17, wherein the cables are flexible belts, and wherein the flexible belts are mounted, on the first drum around a first tension wheel biasing a portion of the first flexible belt into engagement with the first drum and a second tension wheel tensioning the first flexible belt, and on the second drum, around a third tension wheel biasing a portion of the second flexible belt into engagement with the second drum and a fourth tension wheel tensioning the second flexible belt.

19. The afterloader as recited in claim 18, wherein the first and third tension wheels are fixed relative to the base plate and the second and fourth tension wheels are movable relative to the base plate so as to tension the first and second flexible belts, respectfully.

20. The afterloader as recited in claim 19, wherein the second and fourth tension wheels are mounted on first and second spring biased yokes, respectfully, mounted with respect to the base plate.

21. The afterloader as recited in claim 16, further comprising a guide tube positioned between the first drum and the shield capsule such that one end of the guide tube is aligned with a tangent of the first drum and an opposite end of the guide tube is aligned with one end of the pathway through the shield capsule.

22. The afterloader as recited in claim 16, wherein the pathway is non-linear.

23. The afterloader as recited in claim 1, wherein the each of the first and second cranking mechanisms include a drive shaft rotatably mounted with respect to the base plate, a crank affixed to one end of a drive shaft and a slip clutch operatively connected to the drive shaft.

24. The afterloader as recited in claim 23, wherein each of the cranking mechanisms further include a crank handle movable between a first position allowing rotation of the drive shaft and a second position frictionally restraining the drive shaft from being rotated.

25. The afterloader as recited in claim 16, wherein at least one of the first and second drums includes a temporary stop engagable with the drum, the temporary stop halting rotation of the drum after one or more predetermined amounts of rotation of the drum.

26. The afterloader as recited in claim 16, wherein the at least one drum further comprises a first stop block limiting the amount of rotation of the drum in a first direction and a second stop block limiting the amount of rotation of the drum in a second direction.

27. The afterloader as recited in claim 16, further comprising at least one drum lock engageable with a portion of the at least one of the first and second drums, the drum lock when in an engaged position, preventing movement of the drum.

28. The afterloader as recited in claim 27, wherein the circumference of at least one of the first and second drums includes a threaded groove, the threaded groove receiving a non-radioactive portion of a wire.

29. The afterloader as recited in claim 16, further comprising a third drum operatively associated with at least one of the first and second cranking mechanisms, wherein a selector permits rotation of one of the first, second or third drums.

30. The afterloader as recited in claim 29, further comprising a first, second and third drum lock engageable with the first, second and third drums, respectively, wherein the selector is engageable with the first, second and third drum locks to selectively prevent rotation of the drums.

31. The afterloader as recited in claim 16, further including one or more visual indicators, the visual indicators providing indication of which drum is active, the effective lifetime of a wire in cycles or an indication of the distance a wire has traveled.